

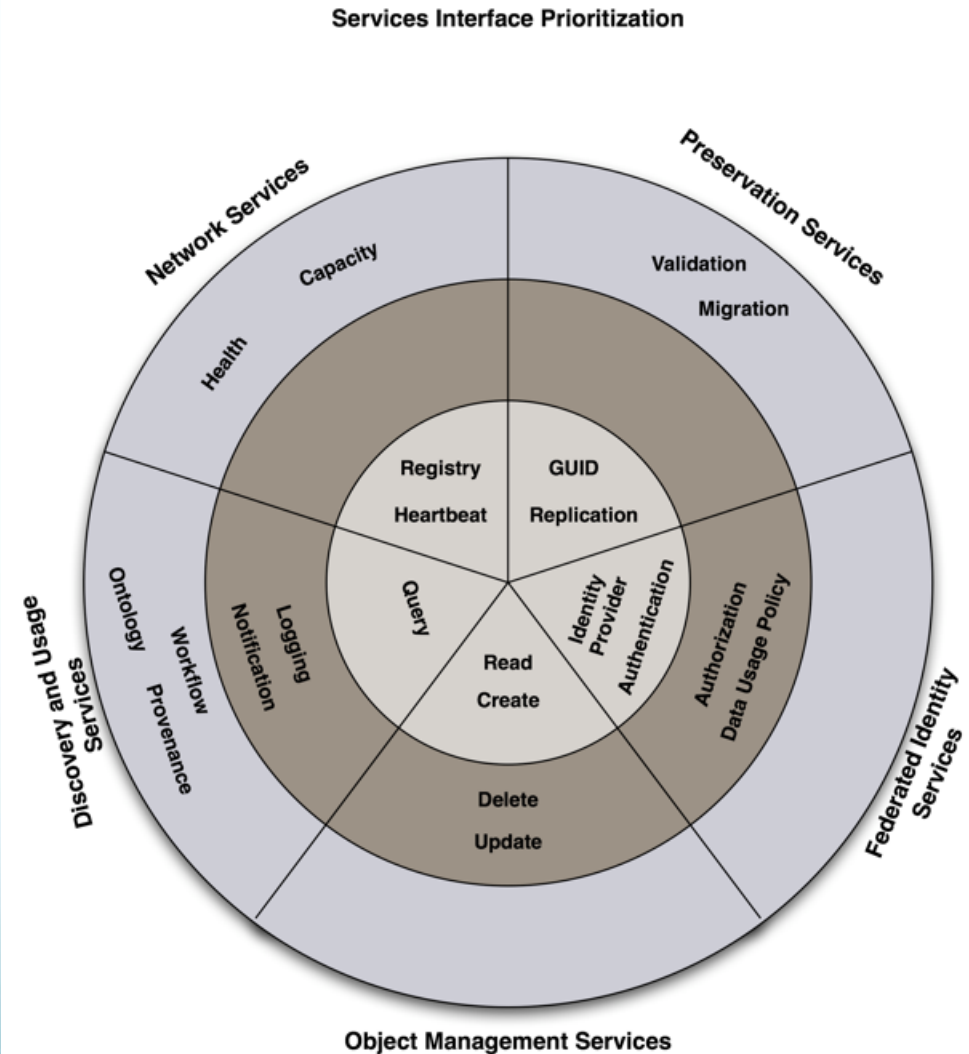
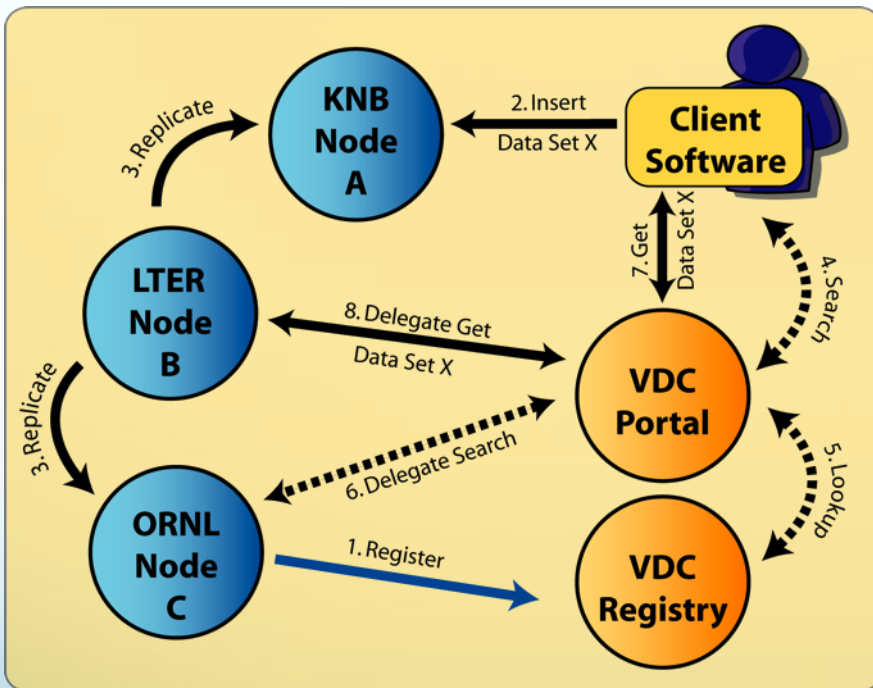
INTEROP: Creation of a Virtual Data Center for the Biodiversity, Ecological and Environmental Sciences

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- **Kathleen Smith, Hilmar Lapp, Todd Vision** – National Evolutionary Synthesis Center (NESCent), Duke University and university of North Carolina
- **Robert Cook**, Oak Ridge National Laboratory DAAC for Biogeochemical Dynamics
- **Mike Frame**, USGS National Biological Information Infrastructure
- **Dave Vieglais**, University of Kansas

Objective 1 (Technical Working Group):

- The goal of this project is to **develop new community capacity and new technologies to support design, implementation, and deployment of a Virtual Data Center (VDC)** for biodiversity, ecological and environmental data.

Architecture Definition and Services Interface Prioritization



Each ring of the diagram represents decreasing priority as one moves out from the center of the diagram.

Completion of 38 Use Case Scenarios

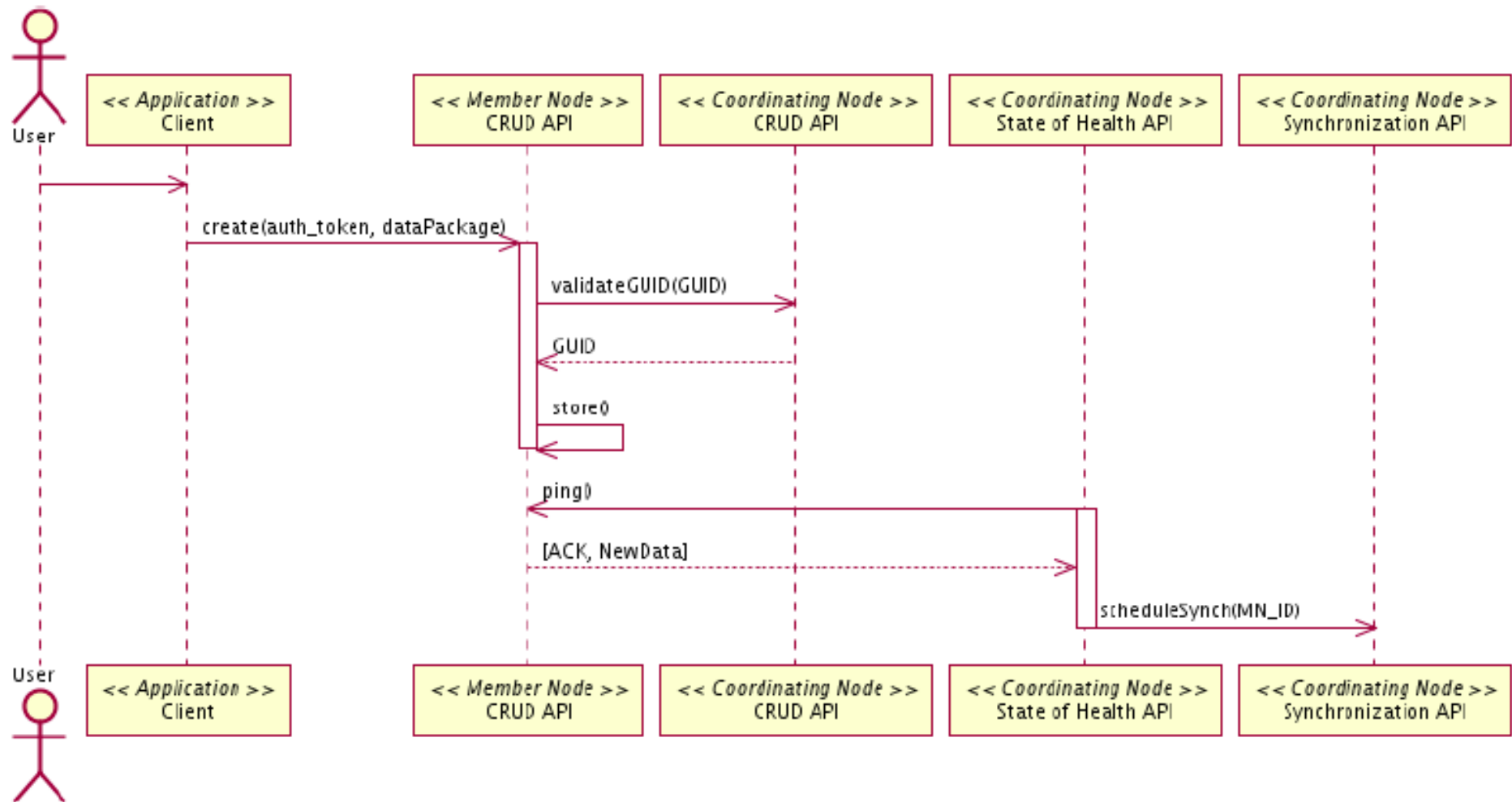


Figure 5.8: Create, update, delete, search metadata or data object in Member Node.

VDC Prototyping Activities

1. The `d1_common_python` library which provides low level implementation of the Virtual Data Center service interfaces.
2. The Command Line Client which forms a part of an Investigator Toolkit that can be used by scientists to manage and analyze data that are part of the VDC infrastructure.
3. The Generic Member Node (GMN) which is a standalone data repository that implements service interfaces designed under the VDC project.
4. The prototype Dryad Member Node which extended the GMN to enable VDC services on the Dryad repository.
5. The prototype ORNL DAAC Member Node which extended the GMN to enable VDC services on the ORNL DAAC repository.

Objective 2: Community Engagement Working Group

- Address **socio-cultural barriers** to data preservation and data sharing, as well as **data center and VDC sustainability**.
- Workshops
 - Research Coordination Workshop (INTEROPs +)
 - Federated Security Workshop
 - Virtual Data Center Preservation Strategy Workshop
 - Virtual Data Center Stakeholders Group Meeting
 - Community Best Practices Workshops
 - Data Governance Workshop



Best Practices

Search Best Practices

Contains [SEARCH](#)

Best Practice Categories

[All Best Practices](#)

- Content and Structure (15)
- Data Access and Discovery (5)
- Data Documentation (3)
- Data Preservation and Archives (7)
- Planning Policies and Governance (1)
- Quality Assurance and Quality Control (5)
- Vocabulary Standards and Services (2)

Featured Best Practice

[Define the contents of Data Files](#)

Category: Data Documentation

- Formats for dates, time, geographic coordinates, and other parameters
- Define any coded values
- Quality flags or qualifying values
- Define missing values

Search Tools

Contains [SEARCH](#)

Tool Categories

[All Tools](#)

- Analysis & Modeling (34)
- Data Acquisition & Modeling (30)
- Workflow (7)

Featured Tool

S-PLUS (S+)

Primary Category: Analysis & Modeling

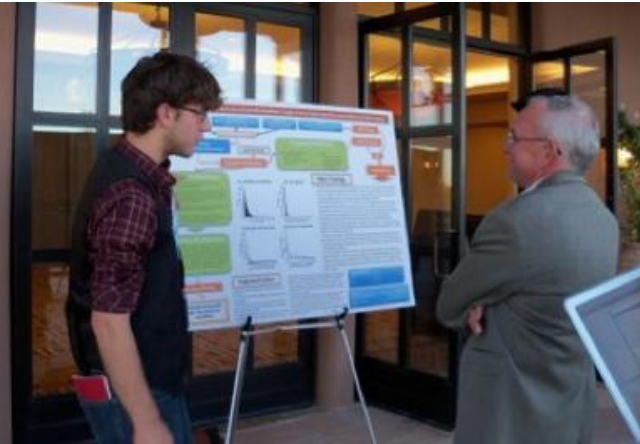
S-PLUS is a commercial implementation of the S statistical programming language that was developed by Bell Labs. S+ has a cross-platform integrated development environment (IDE), provides the ability to analyze gigabyte class data sets on the desktop, and a package system for deployment of analytics.

Cost: Cost-basis

TIBCO Spotfire S+

Objectives 3, 4 & 5: Education, Outreach and Training

- Four + graduate students participated annually in a **summer cyberinfrastructure traineeship** that is modeled after the Google Summer of Code.



- **Outreach will be provided at annual meetings** of relevant professional societies, emerging environmental observatories, and research networks.
- Project results will be incorporated in numerous **annual training sessions** supported by project partners and through the broad adoption of the interoperability solutions developed as part of this project.
 - Outreach and Training
 - American Geophysical Union
 - Ecological Society of America
 - Society of Fish and Wildlife Information Managers
 - Dozens of Professional Society meetings